REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Claims 1-25 remain pending in this application.

The Examiner issued an office action November 17, 2005. Claims 1-6, 9, 12-13, 16, 18-25 were rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Pat. No. 6,424,300 issued to Sanford et al ("Sanford"). Claims 7-8 and 10-11[1] were rejected under 35 U.S.C. §103(a) as being unpatentable over Sanford in view of U.S. Pat. App. Pub. No. 2004/0135726 by Shamir et al ("Shamir"). Claims 15, 17, and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sanford in view of U.S. Pat. No. 6,281,854 issued to Ohoka et al. ("Ohoka"). The Examiner indicated that claim 14 is allowable if rewritten in independent form.

The Examiner has cited Sanford as anticipating claims 1-6, 9, 12-13, 16, and 18-25. Sanford is directed to notch antennas. Sanford describes the use of a notch in regard to a printed circuit board (PCB). "The notch is preferably not cut into the dielectric material of the PCB." (Sanford Col. 3, Lines 28-29) In describing the notch, Sanford teaches that "[t]he portion of the PCB underlying the notch is void of conductors, associated with other functions, on all layers of the PCB." (Sanford Col. 3, Lines 36-38) In particular, Sanford continues by describing that the notch "is simply a narrow rectangular area in which all conductors on all layers of the board have been cleared." (Sanford Col. 3, Lines 38-40)

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[1] The Examiner has listed claims 15 and 17 as rejected based on Sanford in view of Shamir. However, it appears in light of the lack of any discussion regarding the application of that combination to those claims and the subsequent rejection of those claims and claim 24, which contains a similar limitation, in light of Sanford in combination with Ohoka, that the Examiner did not intend Sanford in view of Shamir as the basis for the rejection of claims 15 and 17. Applications have treated the rejections thusly.

In contrast to the notch taught by Sanford, the invention as claimed is directed to devices having a void. One of ordinary skill in the art would understand that a notch is not a void. A void is defined by Merriam Webster's Collegiate Dictionary, Tenth Edition, as an "opening or gap, an empty space." The term "notch" refers to a groove or indentation, i.e. a concave area on a surface. Indeed, Sanford itself supports the distinction between a notch and a void. The notch of Sanford is described as being "void of conductors", an indication that Sanford regarded void to mean a complete absence in contrast to a notch, which Sanford indicates is a physical indentation.

While Sanford's notch is merely an indentation in the PCB which is devoid of conductors, the present claims require a PCB which has a void, i.e. which has a hole in which no PCB material is presence, including not just conductors but all material be absent. The Examiner has cited to Col. 11, Lines 25-67 as disclosing "wherein the substrate is defined by a periphery, wherein within the periphery the substrate defines a void, and wherein the capacitive area generally spans the void." However the cited text actually teaches that "the notch antenna 408 is formed only in this ground plane conductor 400, and is preferably not cut into the dielectric material 409 of the PCB 401." The portion of Sanford relied upon by the Examiner for the rejection actually teaches not to use a void, i.e. to leave the substrate, the PCB, intact.

In addition, Claims 3-20 and 22-25 require that "the capacitive area spans the void." Applicants note that in the Examiner's application of Sanford to claims 1, 3, 9, 18, 21, and 23, no reference is made to any teaching in Sanford which corresponds to the location of the capacitive area in relation to a void. Initially, as previously stated, Sanford does not contemplate a void. In addition, Sanford is silent as to the relation of the notch and the area of capacitance for the notch antenna or to any advantages to positioning the area of capacitance as describe in the claims. However, Applicants have indicated the importance of the position of the void within the capacitive area. "As compared to the capacitance of antenna (99) [Figure 1a,b], an antenna (98) [Figure 1c] that has an equivalent capacitance may be thus provide to comprise a small form-factor/profile." (Pg. 9, Line 22-24) In regard to claims 20 and 22, the Examiner as stated that

Sanford teaches the limitation of the area of capacitance spanning the void. Claims 20 and 22 contain essentially the same limitation. The Examiner has cited Figures 1-8d as teaching the limitation of claim 20 and figure 4a to 11c and Col. 11, Lines 25-67 to Col. 21, Lines 1-45 of Sanford as teaching the limitation of claim 22. However, the cited portions and Sanford in general do not teach the positioning the void such that the capacitive area of the antenna generally spans the void.

As Sanford fails to teach at least the void and the positioning of the area of capacitance in relation to the void, claims 1-6, 9, 12-13, 16, and 18-25 are not anticipated by Sanford.

Claims 7-8 and 10-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sanford in view of Shamir. As previously discussed Sanford fails to teach the use of a void as claimed in all of the pending claims, including claims 7-8 and 10-11. Shamir does not remedy this deficiency. Shamir is directed to a small antenna which is matched to an input impendence. Shamir does not teach an antenna coupled to a substrate having a void therein. In addition, Shamir is silent as to the placement of the capacitive area of the antenna in conjunction with the void. Therefore, the combination of Sanford and Shamir does not teach all of the limitations of claim 7-8 and 10-11.

Claims 15, 17, and 24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sanford in view of Ohoka. Again, Applicants submit that Sanford does not teach the use of a void as required by all of the pending claims, including claims 15, 17, and 24. Ohoka does not supply the teachings absent in Sanford. Ohoka is directed to antennas for finger-type radio devices. Ohoka provides no teaching regarding the use of a void. Rather, Ohoka actually teaches the use of a solid substrate, stating that the antenna is comprised of "an insulation substrate 20, an antenna pattern 22 formed on a front surface of the insulation substrate 20 and a conductor 21 covering a whole rear surface of the insulator substrate 20." (Col 1, Lines 40-45) Ohoka is also silent as to the positioning of the capacitance in relation to a void. The combination of Sanford and Ohoka does not teach all of the limitations of claim 15, 17, and 24.

Applicant believes that the present application is in condition for allowance. Favorable reconsideration of the application is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1450. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1450. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1450.

Respectfully submitted,

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